

W. A. VAIL.
Life Boats.

No. 141,609.

Patented August 5, 1873.

FIG. 1.

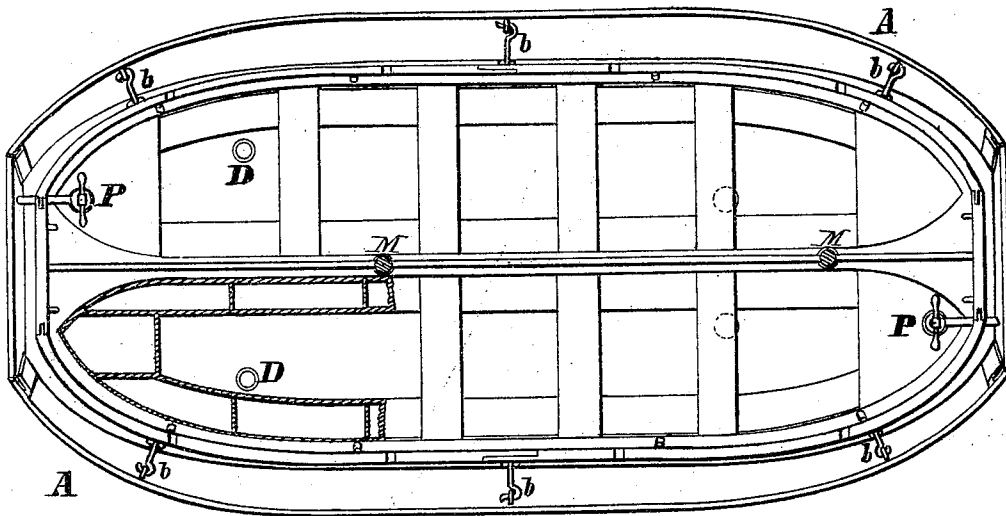
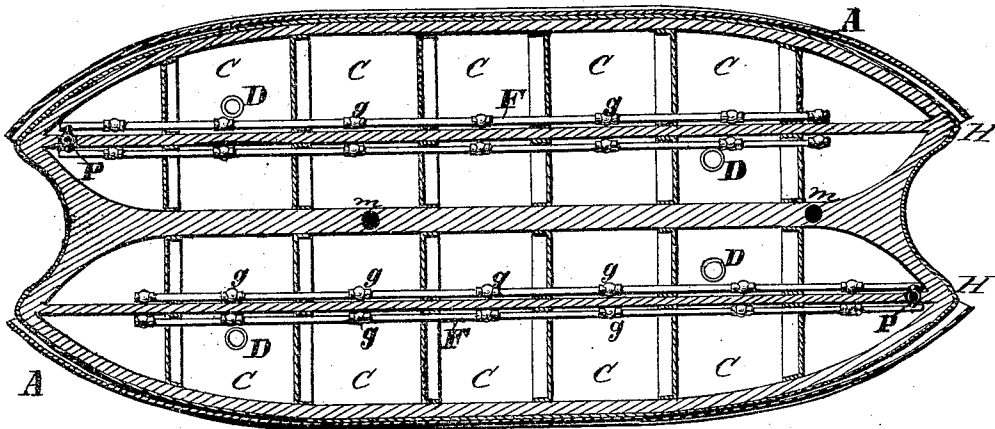


FIG. 2.



WITNESSES.

Geo. L. Ewin
Walter Allen

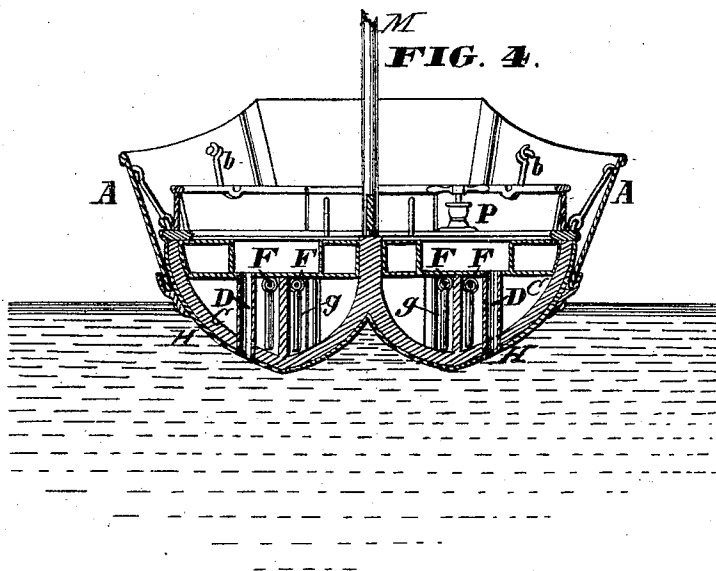
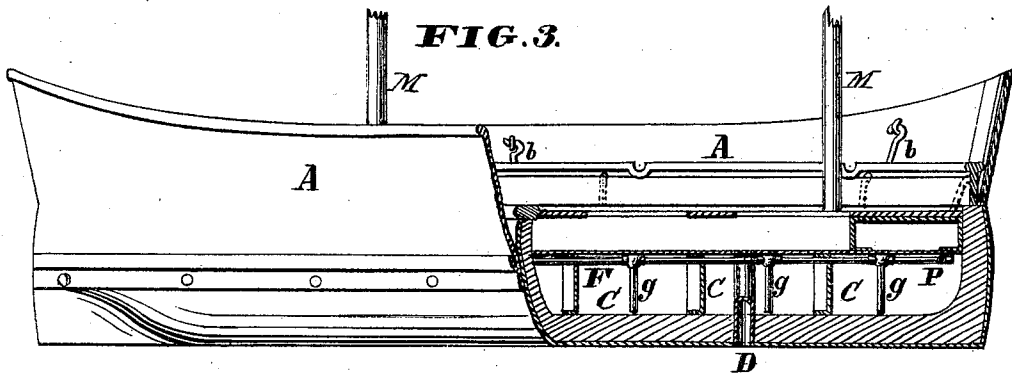
INVENTOR.

William A. Vail.
By *Knights* Attorneys.

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UNITED STATES PATENT OFFICE.

WILLIAM A. VAIL, OF CLINTON, CONNECTICUT.

IMPROVEMENT IN LIFE-BOATS.

Specification forming part of Letters Patent No. **141,609**, dated August 5, 1873; application filed July 9, 1873.

To all whom it may concern:

Be it known that I, WILLIAM A. VAIL, of Clinton, in the county of Middlesex and State of Connecticut, have invented certain Improvements in Life-Boats, of which the following is a specification:

This invention relates to certain improvements in the construction of metallic life-boats, whereby the danger of upsetting is greatly lessened, and much of the inconvenience caused by shipping water is avoided; and it consists in constructing the boat with a double hull containing air-chambers, and with a detachable beam extension surrounding and rising above the bulwarks, and capable of expansion, so as to increase the breadth of beam; and further, in an apparatus for pumping out any water which may leak into any of the air-compartments.

Figure 1 is a plan or top view of my improved life-boat. Fig. 2 is a horizontal section thereof. Fig. 3 is a side elevation; Fig. 4, transverse section.

The boat is constructed of sheet metal, with two hulls, H H, containing air-compartments C C. The frame may be made of either wood or metal in the usual way. The details of construction of the frame are not shown, and a specific description of them is not necessary. The united hull is provided with steps *m* for masts M, to be used when necessary, and with bulwarks and row-locks, which may be removed when desired. It is also provided with seats S running longitudinally for passengers and transversely for officers and crew, said seats being composed of frame-work with lockers L or air-compartments formed under them. The beam extension consists of a detachable rim or flange, A, of sheet metal fitting outside of the bulwarks and entirely surrounding the same, corresponding with the contour and forming a continuation of the curve of the beam. It is secured in place by means of hooks *b* engaging with eyes or staples, by which means also it may be spread out so as to increase the breadth of beam, and thus

lessen the liability to upset. It has openings formed opposite the row-locks, so as not to interfere with the operation of rowing. It may be made in one continuous piece, or in two or more sections, to facilitate packing away when the boat is not in use. This beam-extension, by its height above the bulwarks, affords protection to the occupants of the boat by breaking the force of the waves and lessening the quantity of water shipped in a rough sea, and by its spreading transversely it increases the breadth of beam, and thus lessens the liability to upset. To lessen the inconvenience resulting from shipping water, a number of tubes, D, are formed in the boat, extending through the air-compartments from the deck to the bottom of the boat. By this means any water which may be shipped will immediately flow through the tubes and sink to the water-line.

In the event of one or more of the air-compartments springing a leak, the water may be pumped out by means of an apparatus provided for the purpose, consisting of a series of pipes, F, laid along the deck and connected to pumps P. These pipes have branches *g* communicating with the different air-compartments, each branch being provided with a stop-cock, so that one compartment may be operated upon by the pump without affecting any of the others.

In addition to the cocks, or in lieu thereof, the ends of the pipes may be provided with automatic valves adapted to open when water is in the chambers, and close when they are clear of water.

What I do claim as new, and desire to secure by Letters Patent, is—

The detachable beam-extension for life-boats, made in the form and applied in the manner herein shown and described.

WM. A. VAIL.

Witnesses:

ALFRED HULL,
EZRA E. POST.